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# ***Future of Florida's Families Committee***

## **Prevention of Child Abuse and Neglect Public Hearing**

**Tuesday, October 11, 2005**

**1:00 p.m. – 4:00 p.m.**

**Jane M. Thompson Memorial Chambers**

**County Commission Chambers**

**West Palm Beach, Florida**

**Florida House of Representatives**  
**Future of Florida's Families Committee**

**PREVENTION OF CHILD ABUSE AND NEGLECT**  
**PUBLIC HEARING**

Tuesday, October 11, 2005  
1:00 p.m. – 4:00 p.m.  
Jane M. Thompson Memorial Chambers  
West Palm Beach, Florida

**THEMES:   Consequences of No Prevention or Early Intervention: Foster Care, Juvenile Detention, Prison, or Death -- Role of the Community and Government: Integration of Service Delivery -- Cost of Not Preventing Child Abuse and Neglect**

- |             |   |
|-------------|---|
| 1:00 – 1:15 | Opening Remarks by Chair Galvano and Introduction of Members  |
| 1:15 – 1:35 | Greg Johnson, Assistant Secretary of Prevention and Victim Services<br>Department of Juvenile Justice   |
| 1:35 – 1:50 | Cathy Wooley Brown, Ph.D., President<br>White Hat Management, Tampa, Florida  |
| 1:50 – 2:05 | Michael L. Haney Ph.D., N.C.C., L.M.H.C., Division Director for Prevention and Interventions, Children's Medical Services, Department of Health   |
| 2:05– 2:25  | Ted Simpkins, District Administrator<br>Department of Children and Families, District IX<br><br>John McCarthy, Chief Executive Officer<br>Child and Family Connections<br><br>Gaetana Ebbola, Chief Executive Officer<br>Children's Services Council of Palm Beach County |
| 2:25 – 2:35 | Cindy Arenberg Seltzer, President/Chief Executive Officer<br>Children's Services Council of Broward County  |
| 2:35 – 2:55 | R.V. Brown, Executive Director<br>Outreach to America's Youth, Inc., Odessa, Florida  |
| 2:55 – 3:20 | QUESTIONS AND ANSWERS   |
| 3:20 – 4:00 | <b>PUBLIC TESTIMONY</b>   |



# Program Overview



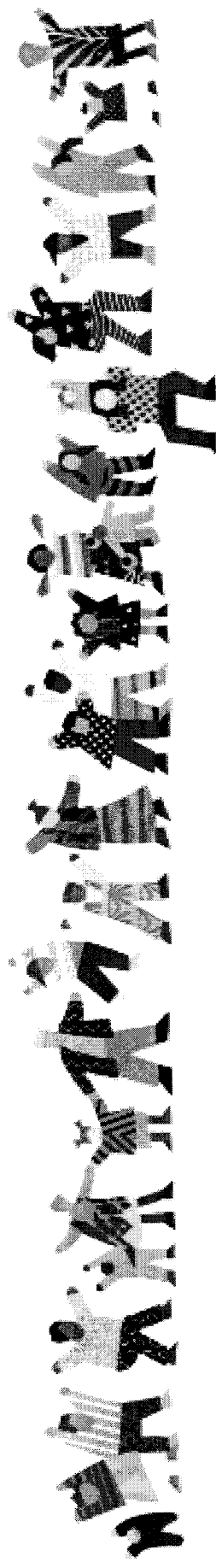
*Life Skills Centers are tuition-free charter schools, serving at-risk and dropout youth ranging in age from 16 to 21. Life Skills Centers were founded in 1999 with the opening of centers in Akron, Cleveland, and Youngstown. As of October 2005:*

- There are currently 37 Life Skills Centers, 9 of which are in Florida: Miami, Fort Lauderdale, Delray Beach, West Palm Beach, Pahokee, Lakeland, and St. Petersburg. Additionally, there are 20 Centers in Ohio, one in Phoenix, Ariz., one each in Denver and Colorado Springs, Colo., and 5 in Michigan.
- All Life Skills Centers are fully accountable for and dedicated to meeting the educational standards established in community.
- All Life Skills Centers committed to meeting Adequate Yearly Progress (AYP) requirements and each school has an extensive plan in place to address every aspect of AYP and No Child Left Behind (NCLB) accountability measures.
- Life Skills Centers also are committed to meeting federal requirements for serving students with special needs, established by the Individuals with Disabilities Education Act (IDEA) and No Child Left Behind (NCLB), as well as any state and local requisites.
- Since inception, more than 6,200 students have graduated with a state-recognized high school diploma and a job. Commencement ceremonies are conducted in June and December, each year.
- Life Skills Centers served more than 11,000 at-risk and dropout youth in the 2004-2005 school year. More than 9,000 students are currently enrolled.
- Each student has an electronic 'Personal Success Plan' which is developed in collaboration with the teacher and parent. This plan is available 24/7 on the web-based Learning Management System, to the student, his parents, and the teacher so that everyone is involved in the learning process.
- Students work at their own levels and paces; students may attend any one of up to four, 4-hour sessions per day – morning, mid-day, afternoon, and in selected locations an evening program.
- Life Skills Centers offer the most successful at-risk and dropout education program in America. To date, no other such program has reported the equivalent number of graduates.
- Life Skills Centers are now on pace to average 2,000 graduates per year.
- A full-time, licensed Family Advocate is provided in every school that forms key relationships with students, family, staff and the community to reduce barriers to student's success and provide a nurturing and supportive environment. Family Advocates make hundreds of contacts with students and families in need by coordinating individual, group, and community services.
- The Life Skills Center's student demographics are reflective of the local community.
- Every teacher is issued a computer and the computer to student ratio is 1:1.
- Every fully enrolled Life Skills Center classroom features three full-time teachers and two full-time assistants.
- Life Skills Centers feature specially designed, computer-based curriculum developed to meet the needs of the community and it is fully aligned with state standards.
- Students have the same graduation requirements as in other local schools, including taking the same number of credits and passing the same required state tests. In addition, students must maintain employment for 90 consecutive days prior to graduation.
- Each Life Skills Center offers full-time employability specialists and a family advocate, providing a full complement of counseling and community-based referrals.



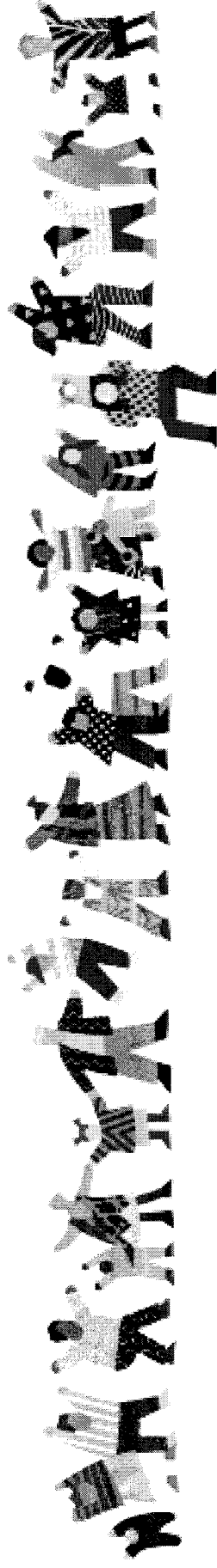
# **Child Abuse: The Health & System Impact**

**Michael L. Haney, Ph.D., NCC, CCISM, LMHC**  
**Division Director**  
**Prevention & Interventions**  
**Children's Medical Services**  
**Florida Department of Health**



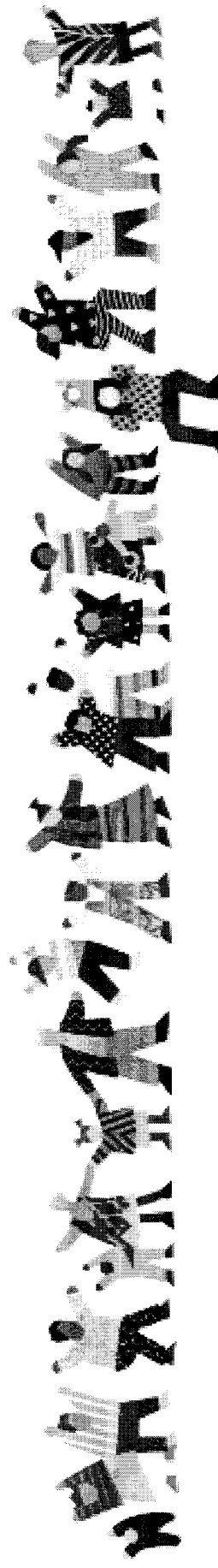
# Child Abuse Prevention

*The Centers for Disease Control and  
Prevention recognizes child maltreatment  
as a serious public health problem with  
extensive short- and long-term health  
consequences*



# Child Abuse Annual Costs

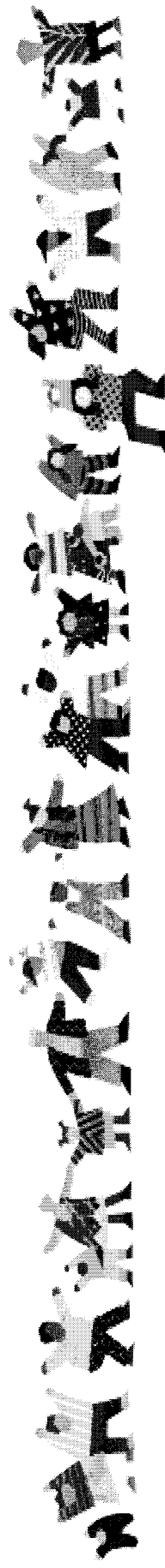
■ Hospitalization -	\$ 6,205,395,000
■ Chronic Health Problems -	2,987,957,000
■ Mental Health Care -	425,110,000
■ Child Welfare System -	14,400,000,000
■ Law Enforcement -	24,709,800
■ Judicial System -	341,174,702
■ Total Direct Cost	\$24,384,347,302





# Child Abuse Annual Costs

■ <i>Special Education -</i>	\$	223,607,830
■ <i>Mental Health &amp; Health Care -</i>		4,627,636,025
■ <i>Juvenile Delinquency -</i>		8,805,291,372
■ <i>Loss Productivity to Society -</i>		656,000,000
■ <i>Adult Criminality -</i>		55,380,000,000
■ <i>Total Indirect Cost</i>	\$	69,692,535,227
■ <i>Total Cost -</i>	\$	94,076,882,529



# Prevention Continuum

- Primary
- Secondary
- Tertiary

# Primary Prevention

A program or service directed at the population at large and designed to prevent child maltreatment before it occurs.

# Secondary Prevention

A program or service directed at populations or persons identified as at risk and designed to prevent child maltreatment before it occurs.

# Tertiary Prevention

A program or service provided to children and families after child abuse or neglect has occurred. The intervention is designed to prevent future incidents of abuse or neglect.

# The ACE Study

## (Adverse Childhood Experiences Study)

- A collaboration between the CDC & Kaiser Permanente's Health Appraisal Clinic in San Diego
- Examined the health, social and economic effects of adverse childhood experiences across the lifespan
- 18,000 participants

# **ACE Study - continued**

➤ What is an adverse childhood experience?

- Child abuse and neglect
- Growing up with domestic violence, substance abuse or mental illness in the home, parental loss, or crime

## **ACE Study - continued**

Many chronic diseases in adults are determined decades earlier, in childhood.

ACE determined the likelihood of the 10 most common causes of death in the US

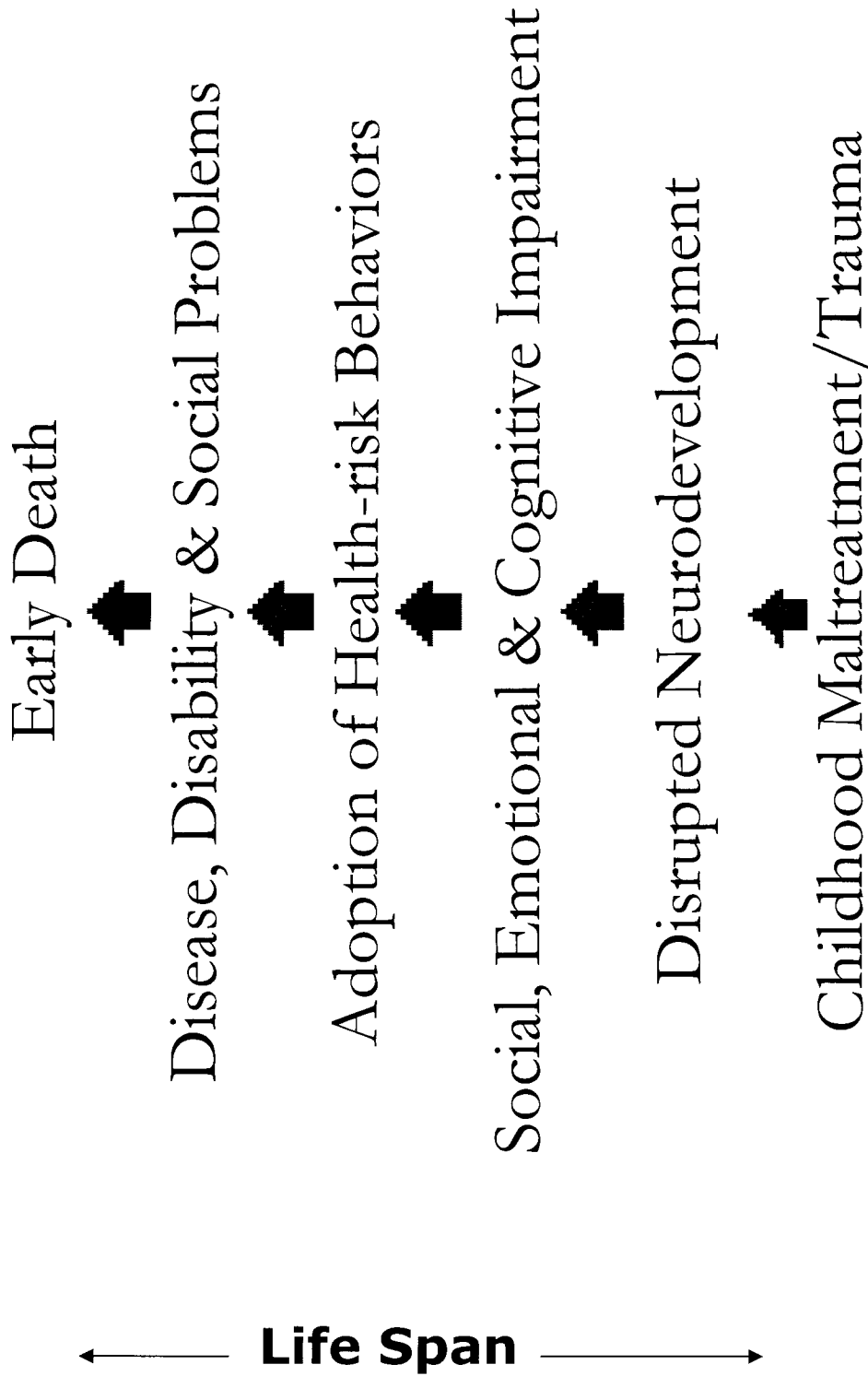


# Long Term Health Effects of Child Abuse

## Top Ten Risk Factors

- Smoking
- Severe Obesity
- Physical Inactivity
- Depression
- Suicide Attempt
- Alcoholism
- Illicit Drug Use
- Injected Drug Use
- 50+ Sexual Partners
- History of Sexually Transmitted Disease

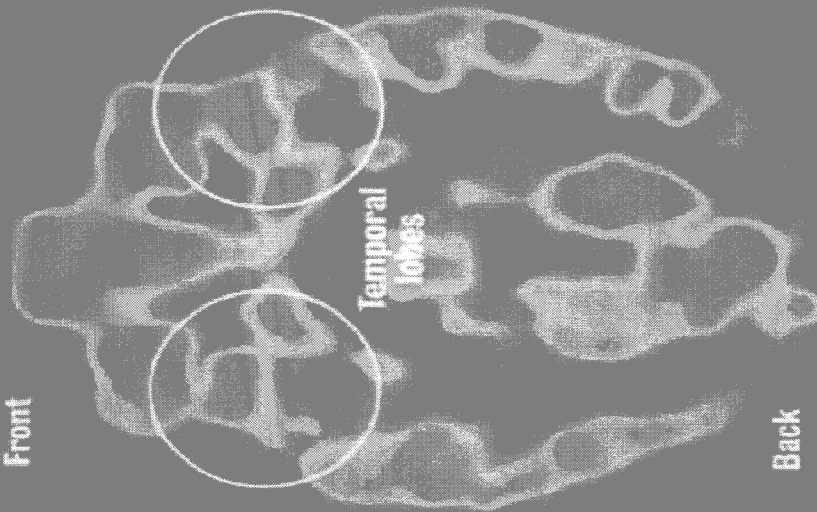
# ACE Pyramid



## Healthy Brain

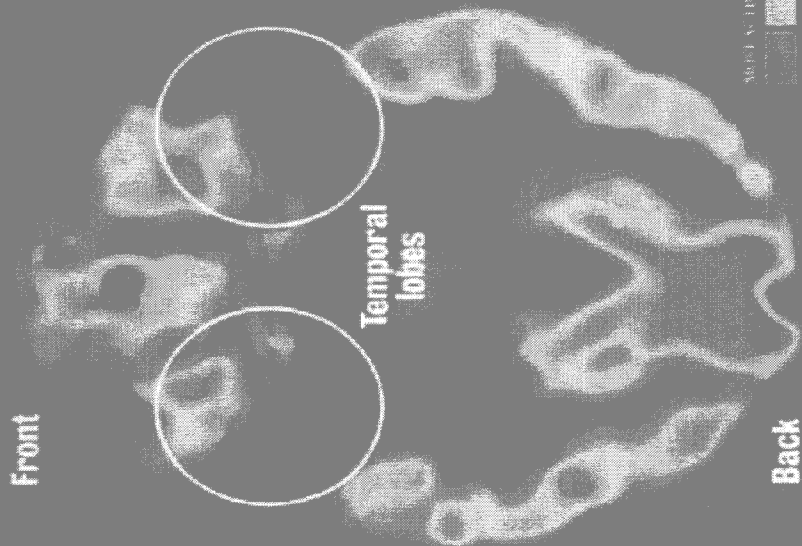
This PET scan of the brain of a normal child shows regions of high (red) and low (blue) metabolic activity. At the bottom, primary structures such as the brain stem centers are fully functional, regions like the temporal lobes stop, early childhood experiences with the

Front



Back

Front



Back

## An Abused Brain

This PET scan of the brain of a four-year-old child who was sexually abused shows a pattern of abnormally low activity. The temporal lobes, which regulate emotions and memory, stop functioning. The temporal lobes stop, which regulate emotions and memory, stop functioning. The temporal lobes stop, which regulate emotions and memory, stop functioning.

Metabolic activity scale

**CDC**  
CENTERS FOR DISEASE CONTROL AND PREVENTION

# Long Term Health Effects of Child Abuse

- 103% more likely to smoke.
- 43% more likely to become suicidal
- 103% more likely to become alcoholics
- 192% more likely to develop a drug addiction

# **Long Term Health Effects of Child Abuse**

- More likely to be involved in teenage pregnancy
- More likely to be obese and have related health problems – diabetes, heart disease....
- More likely to have mental health problems
- Have more doctor visits over the years.
- Use more health care resources

# Long Term Health Effects of Child Abuse

- **Myth:** the younger the child who is the subject of or witness to violence the less the impact the event will have on the child.
- **Reality:** clinical evidence suggests that young children do not forget what they have witnessed and that they have a extraordinary capacity to recall traumatic events.

# Health Care Costs

Expenditures for health care in the United States are estimated to exceed \$1.66 trillion in 2005.

Funding for the Child Abuse Prevention and Treatment Act - \$21,883,123 (FFY 2004)

Florida's allotment - \$1,049,553

# **Health Care Costs Related to Childhood Abuse**

Much of our health care costs can be attributed to the diagnosis and treatment of chronic diseases and conditions such as diabetes, obesity, cardiovascular disease, alcoholism and mental health issues –



# **Economics of Preventing Childhood Maltreatment/Trauma**

**Of total National annual health spending:**

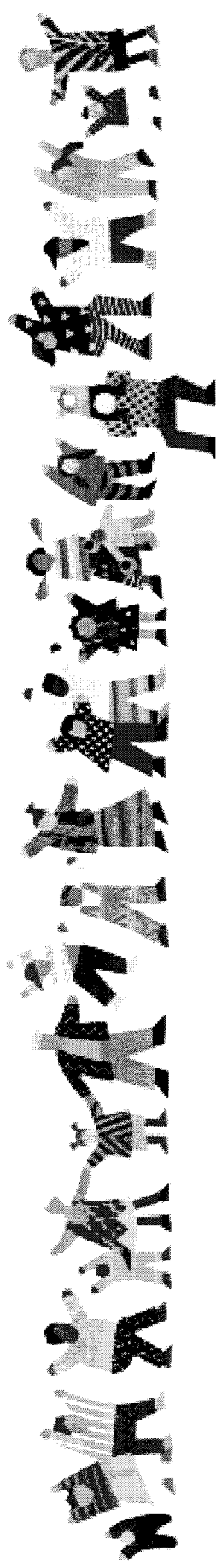
- 14.4% on smoking related illnesses (\$145 billion)**
- 9.1% on obesity related services (\$92 billion)**
- 8.5% on alcohol related health services  
(\$86 billion)**

# **Economics of Preventing Childhood Maltreatment/Trauma**

- Most of the \$\$\$ spent on health care in the United States are for the direct care of medical conditions
- Only a very small portion is targeted on preventing those conditions

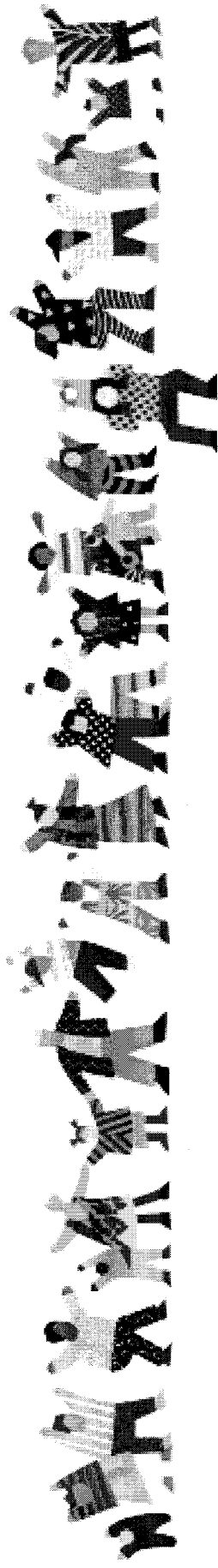
# Long Term Health Effects of Child Abuse

- Preventing childhood abuse:
- Have empirically sound proven interventions
  - Hold communities accountable & measure the outcomes of all programs and services
- Ensure programs are utilized properly for appropriate populations



# Long Term Health Effects of Child Abuse

- Preventing childhood abuse:
- Fund programs across the continuum of Prevention – Primary, Secondary, and Tertiary
- Quality child abuse prevention programs can play a large part in reducing short and long-term health costs
- Follow the road map of the Florida State Plan for the Prevention of Child Abuse



**“The world is a dangerous place to  
live not because of the people who  
are evil, but because of the people  
who don’t do anything about it.”**

**-Albert Einstein**

# **Total Estimated Cost of Child Abuse and Neglect In the United States**

## *Statistical Evidence*

Fromm, Suzette © 2001

### **Introduction**

For years, we have recognized the tragic effects of abuse and neglect on the children against which it is perpetrated. Innumerable scientific studies have documented the link between the abuse and neglect of children and a wide range of medical, emotional, psychological and behavioral disorders. For example, abused and neglected children are more likely to suffer from depression, alcoholism, drug abuse and severe obesity. They are also more likely to require special education in school and to become juvenile delinquents and adult criminals.

This data represents the first attempt to document the nationwide costs resulting from abuse and neglect. These costs can be placed in one of two categories: **direct** (those costs associated with the immediate needs of abused or neglected children) and **indirect** (those costs associated with the long-term and/or secondary effects of child abuse and neglect).

The data cited in the following pages has been drawn from a variety of sources, including the Department of Health and Human Services, the Department of Justice, the U.S. Census and others. Appropriate data citations are included throughout the report.

In all instances, we have opted to use conservative estimates. For instance, only children who could be classified as being abused or neglected according to the harm standard were included in the analysis. The harm standard is the U.S. Department of Health and Human Services' more stringent classification category. In addition, we have not attempted to quantify all of the indirect costs of abuse and neglect including, for example, the provision of Welfare benefits to adults whose economic condition is a direct result of the abuse and neglect they suffered as children. For this reason, we believe the estimate of \$94 billion per year is conservative.

Regardless of the economic costs associated with child abuse and neglect, it is impossible to overstate the tragic consequences endured by the children themselves. Each year, more than three million children are reported as abused or neglected in the United States. And three children die each day from abuse and neglect in this country. The costs of such human suffering are incalculable.

# Total Annual Cost of Child Abuse and Neglect in the United States

## DIRECT COSTS

### Statistical Justification Data

Direct Costs	Estimated Annual Cost
<b>Hospitalization</b> <i>Rationale: 565,000 children were reported as suffering serious harm from abuse in 1993<sup>1</sup>. One of the less severe injuries is a broken or fractured bone. Cost of treating a fracture or dislocation of the radius or ulna per incident is \$10,983<sup>2</sup>.  Calculation: 565,000 x \$10,983</i>	<b>\$6,205,395,000</b>
<b>Chronic Health Problems</b> <i>Rationale: 30% of maltreated children suffer chronic medical problems<sup>3</sup>. The cost of treating a child with asthma per incident in the hospital is \$6,410.  Calculations: .30 x 1,553,800 = 446,140; 446,140 x \$6,410</i>	<b>2,987,957,400</b>
<b>Mental Health Care System</b> <i>Rationale: 743,200 children were abused in 1993<sup>4</sup>. For purposes of obtaining a conservative estimate, neglected children are not included. One of the costs to the mental health care system is counseling. Estimated cost per family for counseling is \$2,860<sup>5</sup>. One in five abused children is estimated to receive these services.  Calculations: 743,200/5 = 148,640; 148,640 x \$2,860</i>	<b>425,110,400</b>
<b>Child Welfare System</b> <i>Rationale: The Urban Institute published a paper in 1999 reporting on the results of a study it conducted estimating child welfare costs associated with child abuse and neglect to be \$14.4 billion<sup>6</sup>.</i>	<b>14,400,000,000</b>
<b>Law Enforcement</b> <i>Rationale: The National Institute of Justice estimates the following costs of police services for each of the following interventions: child sexual abuse (\$56); physical abuse (\$20); emotional abuse (\$20) and child educational neglect (\$2)<sup>7</sup>. Cross referenced against DHHS statistics on number of each incidents occurring annually<sup>8</sup>.  Calculations: Physical Abuse – 381,700 x \$20 = \$7,634,000; Sexual Abuse – 217,700 x \$56 = \$12,191,200; Emotional Abuse – 204,500 x \$20 = \$4,090,000; and Educational Neglect – 397,300 x \$2 = \$794,600</i>	<b>24,709,800</b>
<b>Judicial System</b> <i>Rationale: The Dallas Commission on Children and Youth determined the cost per initiated court action for each case of child maltreatment was \$1,372.34<sup>9</sup>.  Approximately 16% of child abuse victims have court action taken on their behalf.  Calculations: 1,553,800 cases nationwide<sup>10</sup> x .16 = 248,608 victims with court action;  248,608 x \$1,372.34</i>	<b>341,174,702</b>
<b>Total Direct Costs</b>	<b>\$24,384,347,302</b>

<sup>1</sup> Sedlak, A. & Broadhurst, D. (1996). The Third National Incidence Study of Child Abuse and Neglect: NIS 3. U.S. Department of Health and Human Services.

<sup>2</sup> HCUPnet (2000). Available on-line at <http://www.ahrq.gov/data/hcup/hcupnet.htm>.

<sup>3</sup> Hammerle (1992) as cited in Myles, K.T. (2001) Disabilities Caused by Child Maltreatment: Incidence, Prevalence and Financial Data.

<sup>4</sup> Sedlak, A. & Broadhurst, D. (1996). The Third National Incidence Study of Child Abuse and Neglect: NIS 3. U.S. Department of Health and Human Services.

<sup>5</sup> Daro, D. Confronting Child Abuse (New York, NY: The Free Press, 1988).

<sup>6</sup> Geen, Waters Boots and Tumlin (March 1999). The Cost of Protecting Vulnerable Children: Understanding Federal, State, and Local Child Welfare Spending. The Urban Institute.

<sup>7</sup> Miller, T., Cohen, M. & Wiersema (1996). Victims' Cost and Consequences: A New Look. The National Institute of Justice. Available on-line at [www.nij.com](http://www.nij.com).

<sup>8</sup> Sedlak, A. & Broadhurst, D. (1996). The Third National Incidence Study of Child Abuse and Neglect: NIS 3. U.S. Department of Health and Human Services.

<sup>9</sup> Dallas Commission on Children and Youth (1988). A Step Towards a Business Plan for Children in Dallas County: Technical Report Child Abuse and Neglect. Available on-line at [www.ccgd.org](http://www.ccgd.org).

<sup>10</sup> Sedlak, A. & Broadhurst, D. (1996). The Third National Incidence Study of Child Abuse and Neglect: NIS 3. U.S. Department of Health and Human Services.

**Total Annual Cost of Child Abuse and Neglect in the United States**  
**INDIRECT COSTS**  
Statistical Justification Data

<b>Indirect Costs</b>	<b>Estimated Annual Cost</b>
<b>Special Education</b> <i>Rationale: More than 22% of abused children have a learning disorder requiring special education<sup>11</sup>. Total cost per child for learning disorders is \$655 per year. Calculations: <math>1,553,800^{12} \times .22 = 341,386</math>; <math>341,386 \times \\$655</math></i>	<b>\$223,607,830</b>
<b>Mental Health and Health Care</b> <i>The health care cost per woman related to child abuse and neglect is \$8,175,816/163,844=\$50<sup>13</sup>. If the costs were similar for men, we could estimate that \$50 x 185,105,441<sup>14</sup> adults in the U.S. cost the nation \$9,255,272,050. However, the costs for men are likely to be very different and a more conservative estimate would be half of that amount.</i>	<b>4,627,636,025</b>
<b>Juvenile Delinquency</b> <i>Rationale: 26% of children who are abused or neglected become delinquents, compared to 17% of children as a whole<sup>15</sup>, for a difference of 9%. Cost per year per child for incarceration is \$62,966. Average length of incarceration in Michigan is 15 months<sup>16</sup>. Calculations: <math>0.09 \times 1,553,800^{17} = 139,842</math>; <math>139,842 \times \\$62,966 = \\$8,805,291,372</math></i>	<b>8,805,291,372</b>
<b>Lost Productivity to Society</b> <i>Rationale: Abused and neglected children grow up to be disproportionately affected by unemployment and underemployment. Lost productivity has been estimated at \$656 million to \$1.3 billion<sup>18</sup>. Conservative estimate is used.</i>	<b>656,000,000</b>
<b>Adult Criminality</b> <i>Rationale: Violent crime in U.S. costs \$426 billion per year<sup>19</sup>. According to the National Institute of Justice, 13% of all violence can be linked to earlier child maltreatment<sup>20</sup>. Calculations: <math>\\$426 \text{ billion} \times .13</math></i>	<b>55,380,000,000</b>
<b>Total Indirect Costs</b>	<b>\$69,692,535,227</b>
<b>TOTAL COST</b>	<b>\$94,076,882,529</b>

<sup>11</sup> Hammerle (1992) as cited in Daro, D., *Confronting Child Abuse* (New York, NY: The Free Press, 1988).

<sup>12</sup> Sedlak, A. & Broadhurst, D. (1996). *The Third National Incidence Study of Child Abuse and Neglect: NIS 3*. U.S. Department of Health and Human Services.

<sup>13</sup> Walker, E., Unutzer, J., Rutter, C., Gelfand, A., Saunders, K., VonKorff, M., Koss, M. & Katon, W. (1997). Cost of Health Care Use by Women HMO Members with a History of Childhood Abuse and Neglect. *Arc General Psychiatry*, Vol 56, 609-613.

<sup>14</sup> US Census. Available on-line at [www.census.gov](http://www.census.gov).

<sup>15</sup> Widom (2000). *The Cycle of Violence*. Available on-line. U.S. Department of Justice, National Institute of Justice.

<sup>16</sup> Caldwell, R.A. (1992). *The Costs of Child Abuse vs. Child Abuse Prevention: Michigan's Experience*. Michigan Children's Trust Fund and Michigan State University.

<sup>17</sup> Sedlak, A. & Broadhurst, D. (1996). *The Third National Incidence Study of Child Abuse and Neglect: NIS 3*. U.S. Department of Health and Human Services.

<sup>18</sup> Widom (2000). *The Cycle of Violence*. Available on-line. U.S. Department of Justice, National Institute of Justice.

<sup>19</sup> Trends to Watch: 1998 and Beyond: Readers Digest. Ministry Development Division: Washington D.C., 1998.

<sup>20</sup> Miller, T., Cohen, M. & Wiersema (1996). *Victims Cost and Consequences: A New Look*. The National Institute of Justice. Available on-line at [www.nij.com](http://www.nij.com).





NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

**EXCESSIVE STRESS DISRUPTS THE  
ARCHITECTURE OF THE DEVELOPING BRAIN**

SUMMER 2005

WORKING PAPER #3

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## NATIONAL SCIENTIFIC COUNCIL ON THE DEVELOPING CHILD

is a multidisciplinary collaboration of leading scientists in early childhood and early brain development. Its mission is to bring sound and accurate science to bear on public decision-making affecting the lives of young children.

For more information on the Council and the science of early childhood, please see [www.developingchild.net](http://www.developingchild.net).

## THE ISSUE

The ability to cope with novel and/or potentially threatening situations, such as an unfamiliar environment or physical danger, is essential to survival. This capacity is built into specific brain circuits whose development is influenced by multiple experiences beginning early in life. Environmental stimuli that activate these circuits are often referred to as stressors, and stress reactions are the body's chemical and neural responses that promote adaptation.

Stressful events can be harmful, tolerable, or beneficial, depending on how much of a bodily stress response they provoke and how long the response lasts. These, in turn, depend on whether the stressful experience is controllable, how often and for how long the body's stress system has been activated in the past, and whether the affected child has safe and dependable relationships to turn to for support. Thus, the extent to which stressful events have lasting adverse effects is determined more by the individual's response to the stress, based in part on past experiences and the availability of a supportive adult, than by the nature of the stressor itself. This matters because a child's ability to cope with stress in the early years has consequences for physical and mental health throughout life. Furthermore, categorizing the nature and severity of early stressful experiences helps us make better judgments about the need for interventions that reduce the risk for later negative impacts.

**Toxic Stress** refers to strong, frequent or prolonged activation of the body's stress management system. Stressful events that are chronic, uncontrollable, and/or experienced without the child having access to support from caring adults tend to provoke these types of toxic stress responses. Studies indicate that such stress responses can have an adverse impact on brain architecture. In the extreme, such as in cases of severe, chronic abuse, toxic stress may result in the development of a smaller brain. Less extreme exposure to toxic stress can change the stress system so that it responds at lower thresholds to events that might not be stressful to others, thereby increasing the risk of stress-related physical and mental illness.

**Tolerable Stress** refers to stress responses that could affect brain architecture but generally occur for briefer periods that allow time for the brain to recover and thereby reverse potentially harmful effects. In addition to their relative brevity, one of the critical ingredients that make stressful events tolerable rather than toxic is the presence of supportive adults who create safe environments that help children learn to cope with and recover from major adverse experiences, such as the death or serious illness of a loved one, a frightening accident, or parental separation or divorce. In some circumstances, tolerable stress can even have positive effects. Nevertheless, it also can become toxic stress in the absence of supportive relationships.

**Positive Stress** refers to moderate, short-lived stress responses, such as brief increases in heart rate or mild changes in the body's stress hormone levels. This kind of stress is a normal part of life, and learning to adjust to it is an essential feature of healthy development. Adverse events that provoke positive stress responses tend to be those that a child can learn to control and manage well with the support of caring adults, and which occur against the backdrop of generally safe, warm, and positive relationships. The challenge of meeting new people, dealing with frustration, entering a new child care setting, getting an immunization, and overcoming a fear of animals all can be positive stressors if a child has the support needed to develop a sense of mastery. This is an important part of the normal developmental process.

### WHAT SCIENCE TELLS US

Scientific knowledge in this area comes from research on animals as well as humans. These extensive bodies of work have generated common principles of developmental biology that support valid generalizations across species and reasonable hypotheses about humans based on consistent findings from animal studies. The ability to control exposure to negative life experiences in animals makes it additionally possible to conduct studies of the impacts of more graded forms of stress on the brain than could be done in human research.

The capacity to deal with stress is controlled by a set of highly inter-related brain circuits and hormonal systems that are specifically designed to deal adaptively with environmental challenges. When an individual feels threatened, stress hormones are produced that convert the physical or emotional stress into chemical signals that are sent throughout the body as well as to the brain.

- The neural circuits for dealing with stress are particularly malleable (or “plastic”) during the fetal and early childhood periods. Early experiences shape how readily they are activated and how well they can be contained and turned off. Toxic stress during this early period can affect developing brain circuits and hormonal systems in a way that leads to poorly controlled stress-responsive systems that will be overly reactive or slow to shut down when faced with threats throughout the lifespan.<sup>1,2</sup>
- Well functioning brain systems that respond to stress are essential to preserve life. However, like the immune system, which defends the body against threatening infections but can cause autoimmune disease when it turns against the body’s own cells, a poorly controlled response to stress can be damaging to health and well-being if activated too often or for too long.<sup>3</sup>
- Frequent or sustained activation of brain systems that respond to stress can lead to heightened vulnerability to a range of behavioral and physiological disorders over a lifetime. These undesirable outcomes can include a number of stress-related disorders affecting both mental (e.g., depression, anxiety disorders, alcoholism, drug abuse) and physical (e.g., cardiovascular disease, diabetes, stroke) health.<sup>3</sup>

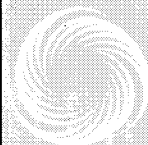
Stress responses include activation of a variety of hormone and neurochemical systems throughout the body. Two hormonal systems have received extensive attention in this regard: (1) the sympathetic-adrenomedullary (SAM) system, which produces adrenaline in the central part of the adrenal gland, and (2) the hypothalamic-pituitary-adrenocortical (HPA) system, which produces cortisol in the outer shell of the adrenal gland.<sup>4</sup> Both chemicals are produced under normal circumstances and help prepare the body for coping with stressors.

- Adrenaline production occurs in response to many forms of acute stress. It mobilizes energy stores and alters blood flow, thereby allowing the body to effectively deal with a range of stresses. Its release is essential to survival.<sup>4</sup>

- Cortisol also is produced in response to many forms of stress, and likewise helps the body cope effectively with adverse situations. It also mobilizes energy stores, as well as suppresses immune responses, when it is released acutely. Longer term effects of cortisol include regulation of gene expression in neural circuits involved in modulating stress responsiveness, emotion, and memory.<sup>4</sup>
- Sustained or frequent activation of the hormonal systems that respond to stress can have serious developmental consequences, some of which may last well past the time of stress exposure. For example, when children experience toxic stress, their cortisol levels remain elevated for prolonged periods of time. Both animal and human studies show that long-term elevations in cortisol levels can alter the function of a number of neural systems, and even change the architecture of regions in the brain that are essential for learning and memory.<sup>5,6</sup>

Much of what we know about the specific effects of stress on the developing architecture of the brain comes from research on rodents, non-human primates, and other animal species. These studies indicate that:

- Increases in the level of cortisol in the brain actually can turn specific genes “on” or “off” at specific times and locations.<sup>7</sup> Examples include regulation of the *glucocorticoid receptor* gene, which affects the long-term responsiveness of the brain to stress-induced cortisol release, and the *myelin basic protein* gene, which is involved in regulating the development of the “insulation” that increases the efficiency of nerve signal transmission.<sup>8,9</sup>
- High, sustained levels of cortisol or corticotropin-releasing hormone (CRH), which is the brain chemical that regulates the HPA system, result in damage to a part of the brain called the hippocampus. This can lead to impairments in learning, memory, and the ability to regulate certain stress responses in both young and adult animals.<sup>10</sup>
- Significant maternal stress during pregnancy and poor maternal care during infancy both affect the developing stress system in young animals. Pregnant females who experience exceptionally high levels of stress have offspring that are more fearful and more reactive to stress themselves. Young animals that experience inattentive maternal care have similar problems. Both groups of animals also have impaired memory and learning abilities, and they experience more aging-related memory and cognitive deficits in adulthood.<sup>3,11</sup>
- Positive experiences after infancy in young animals, such as being exposed to an environment rich in opportunities for exploration and social play, have been shown to compensate to some degree for the negative behavioral consequences of prenatal stress and postnatal neglect. This compensation actually involves adaptive changes in both the architecture and the chemistry of the developing brain (such as reversal of the effects of mild adversity on stress hormone output), although deprivation-induced changes in some of the regulatory components of the stress system (e.g. reduced glucocorticoids receptors in the hippocampus) are more resistant to change.<sup>12</sup>



- Individual responses to early stressful experiences can vary dramatically. This variability is thought to be related to differences among animals in the expression of so-called “vulnerability genes,” which make it more likely that early stressors will lead to subsequent problems in stress hormone regulation and behavioral difficulties. In such cases, positive early caregiving can decrease the likelihood of these adverse outcomes, demonstrating that beneficial environmental influences can moderate the impact of genetic vulnerability.<sup>13</sup>

Building on the extensive knowledge gained from animal research, studies of children are beginning to document a compelling story about the relation between early stress experiences and human development. The following findings appear to be particularly salient.

- The relationships children have with their caregivers play critical roles in regulating stress hormone production during the early years of life. Those who experience the benefits of secure relationships have a more controlled stress hormone reaction when they are upset or frightened. This means that they are able to explore the world, meet challenges, and be frightened at times without sustaining the adverse neurological impacts of chronically elevated levels of hormones such as cortisol that increase reactivity of selected brain systems to stress and threat. In contrast, children whose relationships are insecure or disorganized demonstrate higher stress hormone levels when they are even mildly frightened. This results in an increased incidence of elevated cortisol levels which may alter the development of brain circuits in ways that make some children less capable of coping effectively with stress as they grow up.<sup>2</sup>
- Research has shown that the presence of a sensitive and responsive caregiver can prevent elevations in cortisol among toddlers, even in children who tend to be temperamentally fearful or anxious.<sup>14</sup> Thus, sensitive and responsive caregiving from a parent or a child care provider can serve as a powerful buffer against stress hormone exposure, even in children who might otherwise be highly vulnerable to stress-system activation.
- The quality of the early care and education that many young children receive in programs outside their home also plays an important role in whether (and to what extent) their brains are exposed to elevated stress hormones early in life. For example, once a child has adapted to a specific program setting, regular separations from his or her parents do not trigger elevations in cortisol. However, children who spend significant periods of time in poorer quality child care settings show rising levels of cortisol as the day progresses.<sup>15</sup>
- Children who grow up in families facing economic hardship commonly exhibit elevated cortisol levels. These elevations are often exacerbated when mothers experience symptoms of depression.<sup>16,17,18</sup> Recent research also has demonstrated that a mother’s depression during her child’s early years increases the child’s cortisol reactions to adverse family conditions later in childhood.<sup>19,20,21</sup>
- Young children who are neglected or maltreated have abnormal patterns of cortisol production that can last even after the child has been moved to a safe and loving home. This is especially true for children who show symptoms of post-traumatic stress, even if their behavior is not sufficient to warrant a definitive diagnosis of post-traumatic stress disorder.<sup>5,22,23,24,25</sup>

### POPULAR MISREPRESENTATIONS OF SCIENCE

As the public's appetite for scientific information about the development of young children is stimulated by exciting new findings, the risk of exposure to misleading or frankly irresponsible messages grows. Within this context, it is essential that we distinguish scientific fact from popularly accepted fiction.

- Science does not support the claim that infants and young children are too young to be affected by significant stresses that negatively affect their family and caregiving environments. In fact, animal studies have shown that adverse early infant experiences (e.g., neglectful maternal care), as well as serious disruptions of the pre-natal environment (e.g., drug and alcohol exposure), can lead to short-term neurobehavioral and neurohormonal changes in offspring that may have long-term adverse effects on memory, learning, and behavior throughout life. Human studies suggest that similar effects may be seen in infants and children.<sup>26</sup>
- Notwithstanding the preceding statement, there is no credible scientific evidence that supports the conclusion that young children who have been exposed to significant early stresses will always develop stress-related disorders. In both animal and human studies, interventions that provide more appropriate and supportive care help to stimulate positive growth and prevent poor outcomes.<sup>12,23,27</sup>



### THE SCIENCE-POLICY GAP

The fact that many young children are exposed to significant stresses is old news. How different aspects of a child's environment can be a source of continuous stress, and the degree to which children's past developmental experiences influence their biological responsiveness to later stressful conditions are not appreciated by most adults. The realization that stresses experienced by parents and other caregivers can affect a child's developing brain architecture and chemistry in a way that makes some children more susceptible to stress-related disorders later in life is startling news to most people.

A rich and growing scientific knowledge base illuminates the multiple adverse effects of early life stresses, including their long-term impacts on how individuals cope with stress throughout the life cycle. Yet little attention has been paid to the development and implementation of strategies to reduce stressors that affect everyday life for families with young children. This gap between what we know about the potentially harmful developmental impacts of stresses experienced by both caregivers and children, and what we do to promote healthy coping and adaptation through informal supports, voluntary workplace practices, and formal public policies and programs, is illustrated by the following examples.

○ **Limited availability of family leave after the birth or adoption of a baby, and little financial support for parents who wish to stay at home with their newborns but do not have the economic resources to make ends meet in the absence of paid employment.**

In some circumstances, this creates situations where the supportive relationships necessary to help very young children manage stress are intermittent or seriously compromised.<sup>28,29,30,31</sup>

○ **Limited supports for working parents at all income levels who are struggling to balance the demands and responsibilities of work and raising children.** These balancing challenges are particularly difficult for low-income, working families whose economic security depends on multiple low-wage jobs, often during non-standard working hours, and for families whose children have chronic health problems or special developmental needs that require multiple medical appointments and skilled child care. In such circumstances, some young children are subjected to excessive stress that can have lasting effects on their health and well-being.<sup>31</sup>

○ **Limited efforts to reduce high job turnover in child care programs, which affects the quality of relationships between adults and the children under their care.** This is a particularly serious problem for those children whose family's socioeconomic circumstances limit their access to better quality programs that have well trained, adequately compensated, and more stable staff.<sup>31,32,33,34</sup>

○ **Limited availability of expert help for parents and providers of early care and education who are struggling to manage behavioral difficulties in young children.** This is particularly problematic in the face of recent data on expulsion of children from preschool programs, which indicate the extent to which staff members are unable and/or unwilling to deal with challenging behavioral problems.<sup>35</sup> The growing "off-label" use of prescription drugs, particu-



larly stimulant and anti-depressant medications, for increasingly younger children with emotional or behavioral difficulties is another sign of the extent to which parents are putting greater pressure on professionals to provide more help in managing behavior problems during the preschool years.<sup>36</sup>

- **Limited access to clinical expertise in mental health for very young children and their families.** This is particularly problematic in child welfare agencies that are mandated to assess children who are coping with toxic stress that can have lasting adverse effects on their well-being. Most important, young children who experience debilitating anxiety and trauma as a result of personal abuse or neglect, or who witness violence in their family or neighborhood, are amenable to early treatment.<sup>37,38</sup>

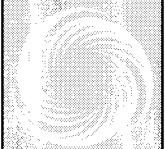


### IMPLICATIONS FOR POLICY AND PROGRAMS

The science of early childhood development, including knowledge about the impact of stress on the developing brain, is sufficiently mature to support a number of evidence-based implications for those who develop and implement policies that affect the health and well-being of young children. To this end, both public and private actions can prevent the kinds of adverse circumstances that are capable of derailing healthy development, as well as increase the likelihood that effective interventions will reduce potential damage to a young child's developing brain architecture and thereby promote greater resilience. Five points are particularly worthy of thoughtful consideration.

- **The rich and growing scientific understanding of how individuals cope with stress should be used to strengthen a range of informal supports and formal services to bolster parents who are struggling to manage the challenges of raising their children.** These could be provided through varying combinations of extended family support, community-based volunteer efforts, flexible workplace policies, and publicly funded programs.<sup>39</sup>
- **The availability of affordable expert assistance should be expanded for parents and providers of early care and education to provide them with sufficient knowledge and skills to help young children who have symptoms related to abnormal stress responses.** This is particularly important for children who exhibit excessive fears, aggressive behavior, or difficulties with attention and "hyperactivity."<sup>31,37</sup>
- **Expertise in the identification, assessment, and clinical treatment of young children with serious, stress-related, mental health problems (as well as access to mental health services for mothers with depression) should be incorporated into existing intervention programs to address these complex and widely unmet needs.** Research indicates that young children can experience a range of mental health impairments that used to be viewed solely as adult problems, such as depression, anxiety disorders, and anti-social behaviors.<sup>31</sup>
- **Investigations of suspected child abuse or neglect should include a sophisticated assessment of the child's developmental status, including cognitive, linguistic, emotional, and social competence.** This could be accomplished through closer collaboration between child welfare services and early intervention programs for children with developmental delays or disabilities,<sup>40</sup> as mandated by the Keeping Children and Families Safe Act of 2003 and the recent reauthorization of the Individuals with Disabilities Education Act (IDEA).
- **Children of mothers who are receiving welfare payments or related services under the Temporary Assistance to Needy Families (TANF) program represent another identified group whose experience with stress is likely to exceed that of the general population.** In this context, it is difficult to justify the extent to which public discussion about welfare reform focuses primarily on maternal employment and other adult behaviors, while the special needs of the young children in these families are afforded relatively little attention. Our knowledge of the importance of supportive relationships as buffers against the adverse

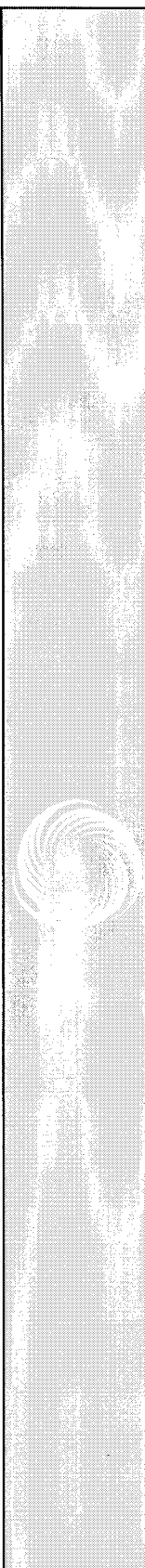
effects of stress on the architecture of the developing brain indicates the need for serious reconsideration of mandated employment for mothers of very young children, particularly when access to high quality child care is not assured. Research also underscores the importance of timely assessments and intervention services (when indicated) for children living in stressful environments who show early signs of developmental difficulties.<sup>41,42</sup>



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*Suggested Citation:* Excessive Stress Disrupts the Architecture of the Brain. (2005). *National Scientific Council on the Developing Child*, Working Paper No. 3. Retrieved [date of retrieval] from <http://www.developingchild.net/reports.shtml>.

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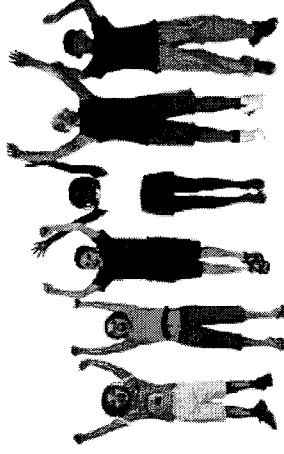
# **Palm Beach County's Primary Prevention and Early Intervention Plan**

***Presentation to the Future of Florida's Families Committee,  
Florida House of Representatives***

**October 11, 2005**

**Presented by**

**Community Partners in Palm Beach County**



## ***Vision***

**Palm Beach County's highest priority is that children are raised in healthy, safe, stable, and nurturing family environments.**



Toward that end, we have implemented a multi-agency, community-wide planning process that focuses on how to build protective factors to promote the development of *resiliency* in children and families.

Overall aim...preventing children from ever touching the child welfare system....or the juvenile justice system...or the mental health system, and so on. No one agency can accomplish this alone.

# Initial Goal:

## Getting Community Partners on the Same Page

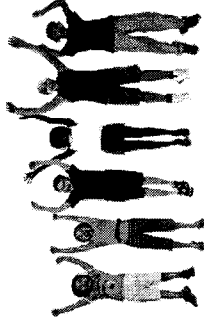
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Common Prevention Goal - Prevent kids from ever being abused, neglected or arrested

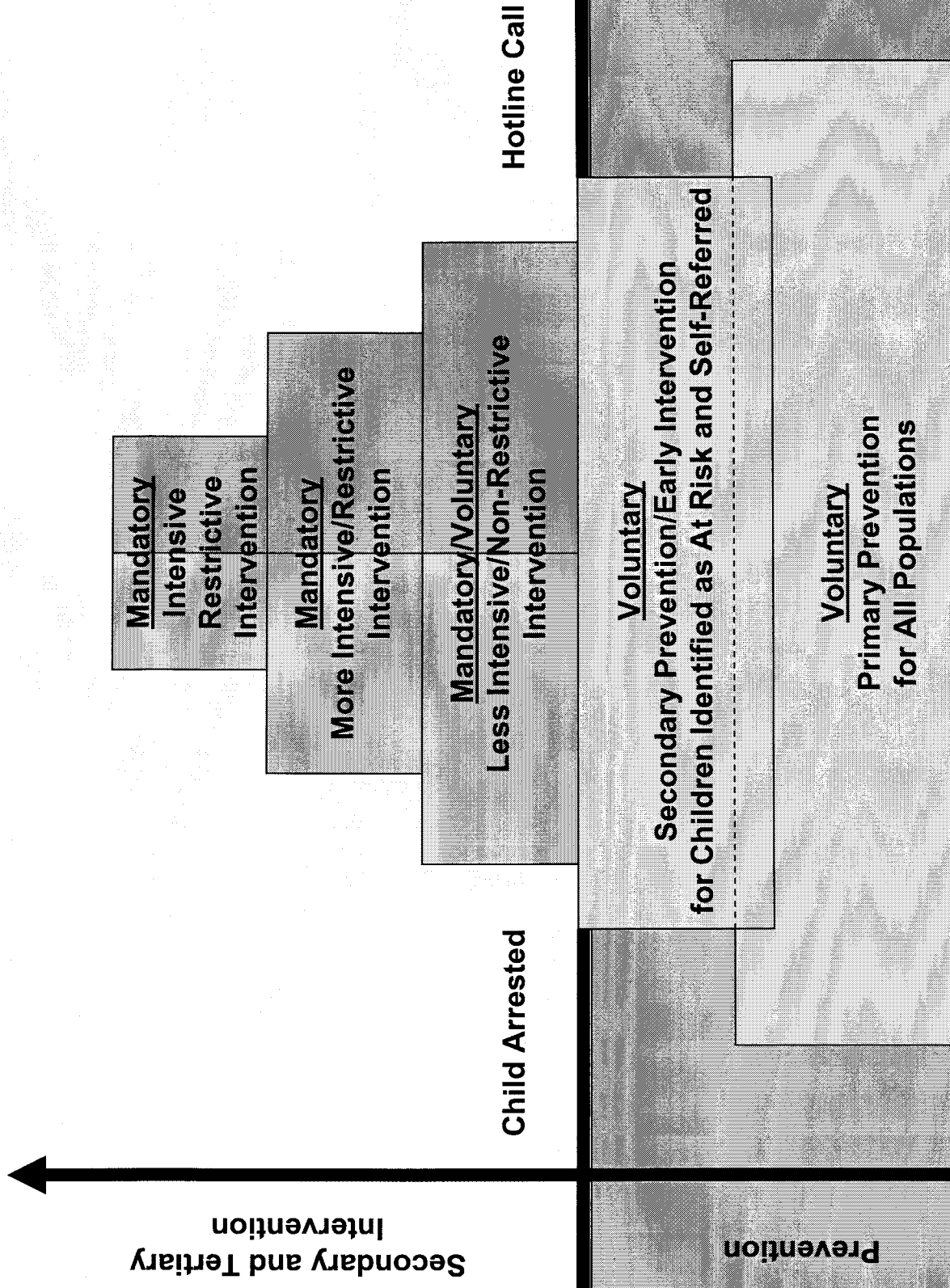
Common Terminology - Prevention means:

- *Primary Prevention* – geared to the general population; and
- *Secondary Prevention/Early Intervention* – for children & families deemed at risk and are self-referred

Joint Planning - Alignment/integration and enhancement of existing plans and initiatives



# Prevention/Intervention Continuum



## Maternal Child Health

## Quality Early Care and Education

Education  
K-20

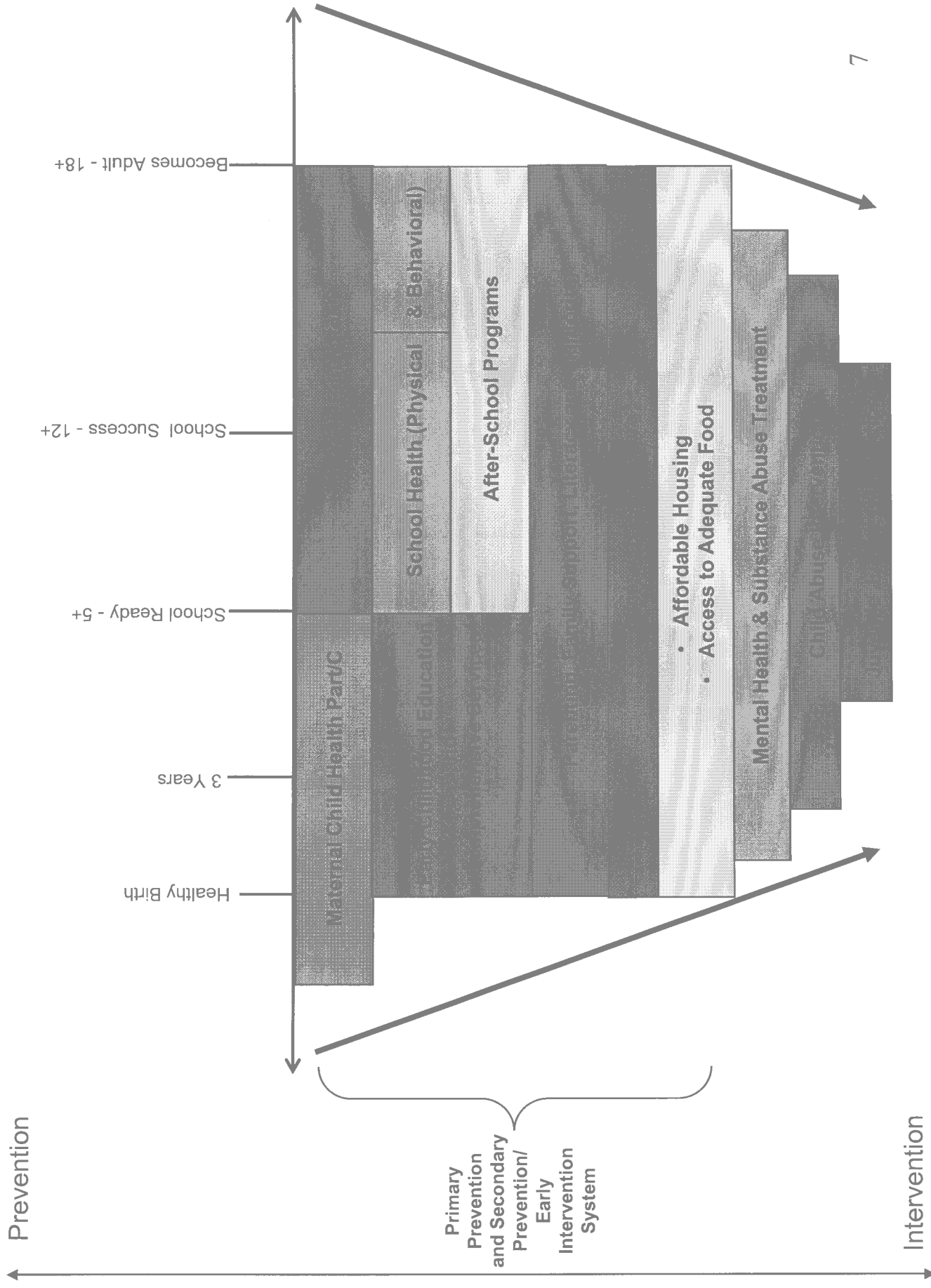
## After-School Programs

## Substance Abuse/Mental Health

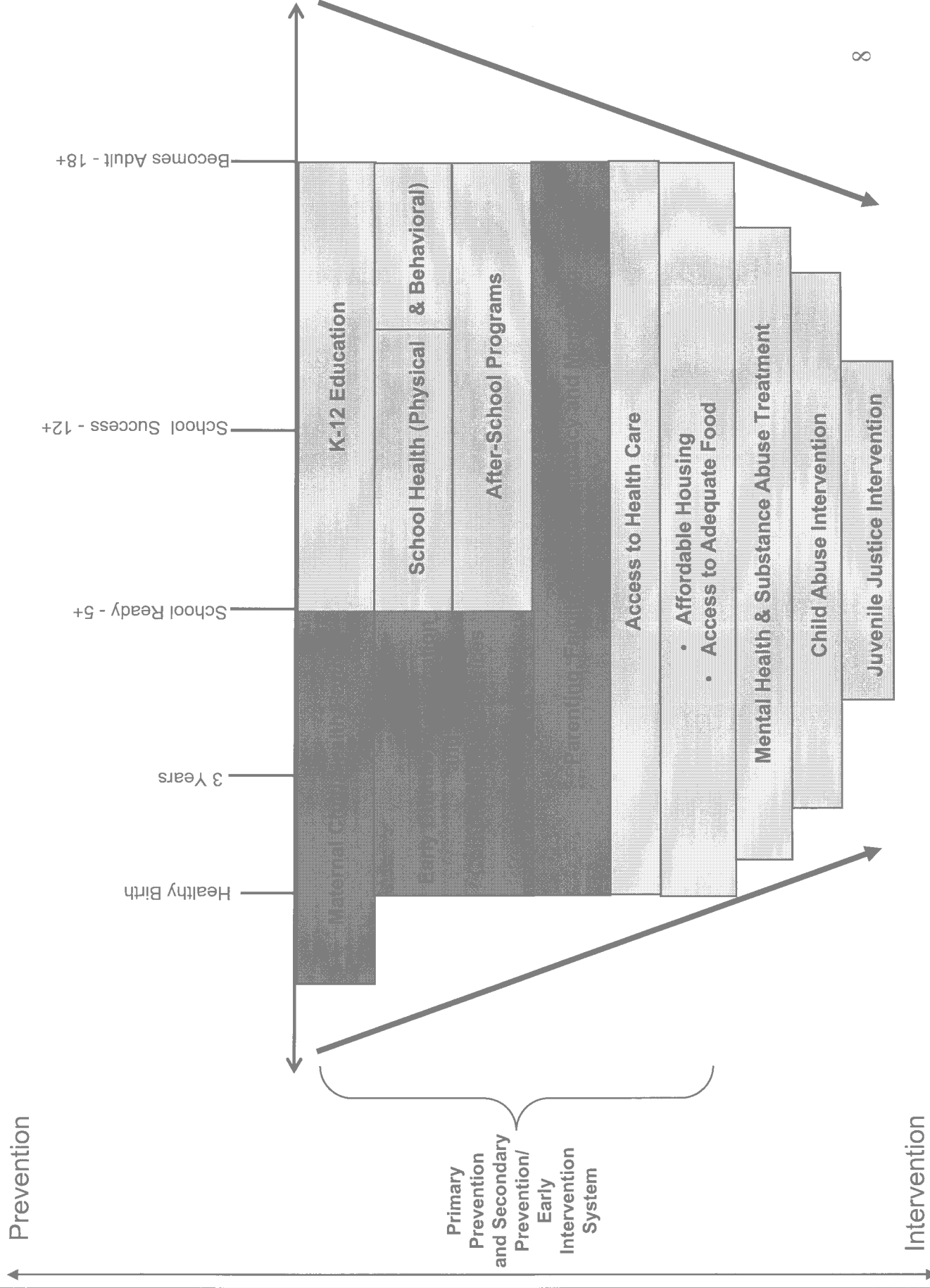
# Affordable Housing, Living Wage and Transportation



# Prevention System for Children



# Prevention System for Children





# Prevention Plan Requirements

- Magnitude of child abuse
- Description of programs in place
- Prioritization of local needs
- Plan to meet identified needs
- Description of barriers
- Recommendations for changes at state level



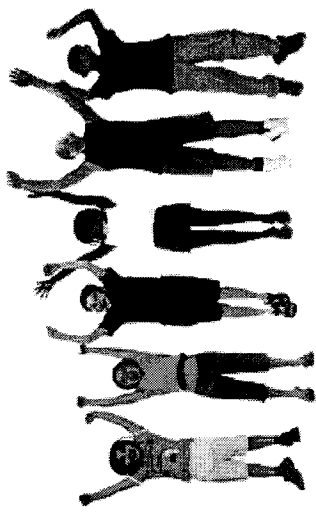
# Top 5 Community Prevention Priorities

- Economic Self-Sufficiency
  - Affordable housing
  - Living wage jobs/benefits/economic supports
- Maternal Child Health & Early Learning
- Quality After School Care
- Educational Attainment – HS graduation
- Interventions for Adults At Risk of Substance Abuse

# Palm Beach County's Primary Prevention/Early Intervention Plan Implementation

- Action Plans developed for each priority area are being coordinated by various lead agencies and integrated with their ongoing work.
- Report to the Community meetings are being held twice per year:
  - Fall – progress report/identify legislative issues
  - Spring – update plan for the following year
- A Report Card for each priority area will identify

- ✓ Accomplishments
- ✓ Program/service gaps
- ✓ New goals/emerging issues
- ✓ Legislative/policy issues



# Prevention is a good investment.

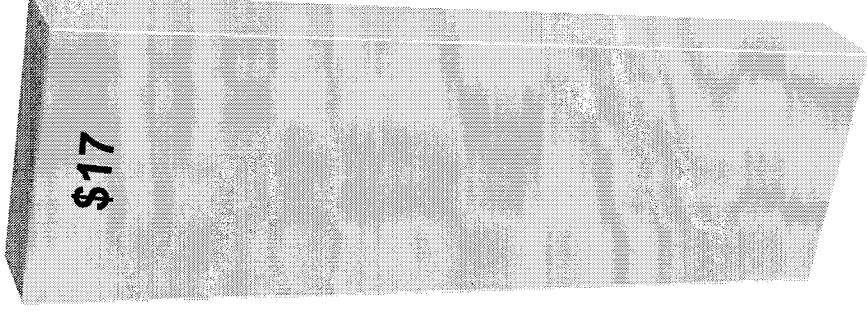
Investment



\$1

=

Return



\$17

Savings in Long-  
Term Costs

Investment  
in Prevention

# Community Partners in Palm Beach County Presenters

Ted Simpkins, District Administrator  
Department of Children and Families, District IX  
(561) 837-5679

John McCarthy, CEO  
Child and Family Connections  
(561) 357-4800

Tana Ebbole, CEO  
Children's Services Council of Palm Beach County  
(561) 655-1010

